

Whiting Petroleum Corp.

Weld County, CO

Sec 7-T10N-R57W

Horsetail #07E-0603A

Hz

Plan: Plan #1

Standard Planning Report

29 January, 2015



WOG
Planning Report



Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07E-0603A
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4942.70usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	KBE @ 4942.70usft (Original Well Elev)
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-0603A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Project	Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec 7-T10N-R57W			
Site Position:		Northing:	1,558,450.14 usft	Latitude:	40° 51' 14.300 N
From:	Lat/Long	Easting:	3,469,810.15 usft	Longitude:	103° 48' 5.960 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	1.10 °

Well	Horsetail #07E-0603A					
Well Position	+N/-S	-54.63 usft	Northing:	1,558,398.75 usft	Latitude:	40° 51' 13.760 N
	+E/-W	168.35 usft	Easting:	3,469,979.51 usft	Longitude:	103° 48' 3.769 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,925.70 usft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/5/2015	7.89	67.44	53,087

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.44

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
850.00	9.00	188.00	848.15	-34.93	-4.91	2.00	2.00	0.00	188.00	
3,955.00	9.00	188.00	3,914.92	-515.93	-72.51	0.00	0.00	0.00	0.00	
4,405.00	0.00	0.00	4,363.07	-550.86	-77.42	2.00	-2.00	38.22	180.00	
5,270.90	0.00	0.00	5,228.98	-550.86	-77.42	0.00	0.00	0.00	0.00	
6,089.08	90.00	0.00	5,749.85	-29.99	-77.42	11.00	11.00	0.00	0.00	
6,685.28	90.00	0.05	5,749.85	566.22	-77.14	0.01	0.00	0.01	91.38	
13,342.25	90.00	0.05	5,750.00	7,223.18	-71.00	0.00	0.00	0.00	0.00	PBHL 0603A



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Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-0603A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
Build 2°/100'									
500.00	2.00	188.00	499.98	-1.73	-0.24	-1.73	2.00	2.00	0.00
600.00	4.00	188.00	599.84	-6.91	-0.97	-6.90	2.00	2.00	0.00
700.00	6.00	188.00	699.45	-15.54	-2.18	-15.52	2.00	2.00	0.00
800.00	8.00	188.00	798.70	-27.61	-3.88	-27.57	2.00	2.00	0.00
850.00	9.00	188.00	848.15	-34.93	-4.91	-34.88	2.00	2.00	0.00
Hold 9° Inc									
900.00	9.00	188.00	897.54	-42.67	-6.00	-42.61	0.00	0.00	0.00
1,000.00	9.00	188.00	996.30	-58.16	-8.17	-58.08	0.00	0.00	0.00
1,100.00	9.00	188.00	1,095.07	-73.66	-10.35	-73.55	0.00	0.00	0.00
1,200.00	9.00	188.00	1,193.84	-89.15	-12.53	-89.02	0.00	0.00	0.00
1,300.00	9.00	188.00	1,292.61	-104.64	-14.71	-104.49	0.00	0.00	0.00
1,400.00	9.00	188.00	1,391.38	-120.13	-16.88	-119.96	0.00	0.00	0.00
1,500.00	9.00	188.00	1,490.15	-135.62	-19.06	-135.43	0.00	0.00	0.00
1,560.60	9.00	188.00	1,550.00	-145.01	-20.38	-144.80	0.00	0.00	0.00
Upper Pierre									
1,600.00	9.00	188.00	1,588.92	-151.11	-21.24	-150.90	0.00	0.00	0.00
1,700.00	9.00	188.00	1,687.69	-166.60	-23.41	-166.36	0.00	0.00	0.00
1,800.00	9.00	188.00	1,786.46	-182.09	-25.59	-181.83	0.00	0.00	0.00
1,900.00	9.00	188.00	1,885.22	-197.58	-27.77	-197.30	0.00	0.00	0.00
2,000.00	9.00	188.00	1,983.99	-213.08	-29.95	-212.77	0.00	0.00	0.00
2,100.00	9.00	188.00	2,082.76	-228.57	-32.12	-228.24	0.00	0.00	0.00
2,200.00	9.00	188.00	2,181.53	-244.06	-34.30	-243.71	0.00	0.00	0.00
2,300.00	9.00	188.00	2,280.30	-259.55	-36.48	-259.18	0.00	0.00	0.00
2,400.00	9.00	188.00	2,379.07	-275.04	-38.65	-274.65	0.00	0.00	0.00
2,500.00	9.00	188.00	2,477.84	-290.53	-40.83	-290.12	0.00	0.00	0.00
2,600.00	9.00	188.00	2,576.61	-306.02	-43.01	-305.59	0.00	0.00	0.00
2,700.00	9.00	188.00	2,675.38	-321.51	-45.19	-321.05	0.00	0.00	0.00
2,800.00	9.00	188.00	2,774.14	-337.01	-47.36	-336.52	0.00	0.00	0.00
2,900.00	9.00	188.00	2,872.91	-352.50	-49.54	-351.99	0.00	0.00	0.00
3,000.00	9.00	188.00	2,971.68	-367.99	-51.72	-367.46	0.00	0.00	0.00
3,100.00	9.00	188.00	3,070.45	-383.48	-53.89	-382.93	0.00	0.00	0.00
3,200.00	9.00	188.00	3,169.22	-398.97	-56.07	-398.40	0.00	0.00	0.00
3,300.00	9.00	188.00	3,267.99	-414.46	-58.25	-413.87	0.00	0.00	0.00
3,400.00	9.00	188.00	3,366.76	-429.95	-60.43	-429.34	0.00	0.00	0.00
3,500.00	9.00	188.00	3,465.53	-445.44	-62.60	-444.81	0.00	0.00	0.00
3,534.90	9.00	188.00	3,500.00	-450.85	-63.36	-450.21	0.00	0.00	0.00
Hygiene									
3,600.00	9.00	188.00	3,564.29	-460.94	-64.78	-460.28	0.00	0.00	0.00
3,686.77	9.00	188.00	3,650.00	-474.38	-66.67	-473.70	0.00	0.00	0.00
Lower Pierre									
3,700.00	9.00	188.00	3,663.06	-476.43	-66.96	-475.75	0.00	0.00	0.00
3,800.00	9.00	188.00	3,761.83	-491.92	-69.13	-491.21	0.00	0.00	0.00
3,900.00	9.00	188.00	3,860.60	-507.41	-71.31	-506.68	0.00	0.00	0.00
3,955.00	9.00	188.00	3,914.92	-515.93	-72.51	-515.19	0.00	0.00	0.00
Drop 2°/100'									
4,000.00	8.10	188.00	3,959.42	-522.55	-73.44	-521.81	2.00	-2.00	0.00
4,100.00	6.10	188.00	4,058.65	-534.79	-75.16	-534.03	2.00	-2.00	0.00



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Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-0603A	Survey Calculation Method:	Minimum Curvature
Wellbore:	H2		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,200.00	4.10	188.00	4,158.25	-543.60	-76.40	-542.82	2.00	-2.00	0.00
4,300.00	2.10	188.00	4,258.10	-548.95	-77.15	-548.17	2.00	-2.00	0.00
4,405.00	0.00	0.00	4,363.07	-550.86	-77.42	-550.07	2.00	-2.00	163.81
Hold Vertical									
4,500.00	0.00	0.00	4,458.08	-550.86	-77.42	-550.07	0.00	0.00	0.00
4,600.00	0.00	0.00	4,558.08	-550.86	-77.42	-550.07	0.00	0.00	0.00
4,700.00	0.00	0.00	4,658.08	-550.86	-77.42	-550.07	0.00	0.00	0.00
4,800.00	0.00	0.00	4,758.08	-550.86	-77.42	-550.07	0.00	0.00	0.00
4,900.00	0.00	0.00	4,858.08	-550.86	-77.42	-550.07	0.00	0.00	0.00
5,000.00	0.00	0.00	4,958.08	-550.86	-77.42	-550.07	0.00	0.00	0.00
5,100.00	0.00	0.00	5,058.08	-550.86	-77.42	-550.07	0.00	0.00	0.00
5,200.00	0.00	0.00	5,158.08	-550.86	-77.42	-550.07	0.00	0.00	0.00
5,270.90	0.00	0.00	5,228.98	-550.86	-77.42	-550.07	0.00	0.00	0.00
KOP, Build 11°/100'									
5,300.00	3.20	0.00	5,258.06	-550.04	-77.42	-549.26	11.00	11.00	0.00
5,350.00	8.70	0.00	5,307.77	-544.86	-77.42	-544.07	11.00	11.00	0.00
5,400.00	14.20	0.00	5,356.76	-534.94	-77.42	-534.15	11.00	11.00	0.00
5,450.00	19.70	0.00	5,404.57	-520.37	-77.42	-519.58	11.00	11.00	0.00
5,500.00	25.20	0.00	5,450.76	-501.28	-77.42	-500.49	11.00	11.00	0.00
5,550.00	30.70	0.00	5,494.91	-477.85	-77.42	-477.07	11.00	11.00	0.00
5,573.69	33.31	0.00	5,515.00	-465.30	-77.42	-464.51	11.00	11.00	0.00
P200 Marker									
5,591.85	35.30	0.00	5,530.00	-455.06	-77.42	-454.28	11.00	11.00	0.00
P300 Marker									
5,600.00	36.20	0.00	5,536.61	-450.30	-77.42	-449.52	11.00	11.00	0.00
5,616.79	38.05	0.00	5,550.00	-440.17	-77.42	-439.39	11.00	11.00	0.00
P350 Marker									
5,650.00	41.70	0.00	5,575.48	-418.88	-77.42	-418.10	11.00	11.00	0.00
5,700.00	47.20	0.00	5,611.16	-383.88	-77.42	-383.10	11.00	11.00	0.00
5,750.00	52.70	0.00	5,643.32	-345.62	-77.42	-344.84	11.00	11.00	0.00
5,800.00	58.20	0.00	5,671.66	-304.45	-77.42	-303.68	11.00	11.00	0.00
5,850.00	63.70	0.00	5,695.93	-260.76	-77.42	-259.99	11.00	11.00	0.00
5,864.08	65.25	0.00	5,702.00	-248.05	-77.42	-247.28	11.00	11.00	0.00
Sharon Springs									
5,876.34	66.60	0.00	5,707.00	-236.86	-77.42	-236.09	11.00	11.00	0.00
Niobrara									
5,900.00	69.20	0.00	5,715.90	-214.94	-77.42	-214.17	11.00	11.00	0.00
5,934.24	72.97	0.00	5,727.00	-182.55	-77.42	-181.78	11.00	11.00	0.00
Top A Chalk									
5,950.00	74.70	0.00	5,731.39	-167.42	-77.42	-166.65	11.00	11.00	0.00
6,000.00	80.20	0.00	5,742.25	-118.63	-77.42	-117.87	11.00	11.00	0.00
6,050.00	85.70	0.00	5,748.38	-69.03	-77.42	-68.27	11.00	11.00	0.00
6,089.08	90.00	0.00	5,749.85	-29.99	-77.42	-29.22	11.00	11.00	0.00
LP @ 90° Inc, Hold - 7"									
6,100.00	90.00	0.00	5,749.85	-19.07	-77.42	-18.30	0.01	0.00	0.01
6,200.00	90.00	0.01	5,749.85	80.93	-77.41	81.69	0.01	0.00	0.01
6,300.00	90.00	0.02	5,749.85	180.93	-77.38	181.69	0.01	0.00	0.01
6,400.00	90.00	0.03	5,749.85	280.93	-77.34	281.68	0.01	0.00	0.01
6,500.00	90.00	0.04	5,749.85	380.93	-77.29	381.67	0.01	0.00	0.01
6,600.00	90.00	0.05	5,749.85	480.93	-77.22	481.67	0.01	0.00	0.01
6,685.28	90.00	0.05	5,749.85	566.22	-77.14	566.95	0.01	0.00	0.01
6,700.00	90.00	0.05	5,749.85	580.93	-77.13	581.66	0.00	0.00	0.00
6,800.00	90.00	0.05	5,749.85	680.93	-77.04	681.66	0.00	0.00	0.00

WOG
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Project:	Weld County, CO	MD Reference:	KBE @ 4942.70usft (Original Well Elev)
Site:	Sec 7-T10N-R57W	North Reference:	True
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Wellbore:	H2		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,900.00	90.00	0.05	5,749.86	780.93	-76.94	781.65	0.00	0.00	0.00
7,000.00	90.00	0.05	5,749.86	880.93	-76.85	881.65	0.00	0.00	0.00
7,100.00	90.00	0.05	5,749.86	980.93	-76.76	981.64	0.00	0.00	0.00
7,200.00	90.00	0.05	5,749.86	1,080.93	-76.67	1,081.63	0.00	0.00	0.00
7,300.00	90.00	0.05	5,749.87	1,180.93	-76.58	1,181.63	0.00	0.00	0.00
7,400.00	90.00	0.05	5,749.87	1,280.93	-76.48	1,281.62	0.00	0.00	0.00
7,500.00	90.00	0.05	5,749.87	1,380.93	-76.39	1,381.62	0.00	0.00	0.00
7,600.00	90.00	0.05	5,749.87	1,480.93	-76.30	1,481.61	0.00	0.00	0.00
7,700.00	90.00	0.05	5,749.87	1,580.93	-76.21	1,581.61	0.00	0.00	0.00
7,800.00	90.00	0.05	5,749.88	1,680.93	-76.11	1,681.60	0.00	0.00	0.00
7,900.00	90.00	0.05	5,749.88	1,780.93	-76.02	1,781.59	0.00	0.00	0.00
8,000.00	90.00	0.05	5,749.88	1,880.93	-75.93	1,881.59	0.00	0.00	0.00
8,100.00	90.00	0.05	5,749.88	1,980.93	-75.84	1,981.58	0.00	0.00	0.00
8,200.00	90.00	0.05	5,749.89	2,080.93	-75.74	2,081.58	0.00	0.00	0.00
8,300.00	90.00	0.05	5,749.89	2,180.93	-75.65	2,181.57	0.00	0.00	0.00
8,400.00	90.00	0.05	5,749.89	2,280.93	-75.56	2,281.57	0.00	0.00	0.00
8,500.00	90.00	0.05	5,749.89	2,380.93	-75.47	2,381.56	0.00	0.00	0.00
8,600.00	90.00	0.05	5,749.89	2,480.93	-75.38	2,481.55	0.00	0.00	0.00
8,700.00	90.00	0.05	5,749.90	2,580.93	-75.28	2,581.55	0.00	0.00	0.00
8,800.00	90.00	0.05	5,749.90	2,680.93	-75.19	2,681.54	0.00	0.00	0.00
8,900.00	90.00	0.05	5,749.90	2,780.93	-75.10	2,781.54	0.00	0.00	0.00
9,000.00	90.00	0.05	5,749.90	2,880.93	-75.01	2,881.53	0.00	0.00	0.00
9,100.00	90.00	0.05	5,749.91	2,980.93	-74.91	2,981.52	0.00	0.00	0.00
9,200.00	90.00	0.05	5,749.91	3,080.93	-74.82	3,081.52	0.00	0.00	0.00
9,274.83	90.00	0.05	5,749.91	3,155.76	-74.75	3,156.34	0.00	0.00	0.00
Beffie #1									
9,300.00	90.00	0.05	5,749.91	3,180.93	-74.73	3,181.51	0.00	0.00	0.00
9,400.00	90.00	0.05	5,749.91	3,280.93	-74.64	3,281.51	0.00	0.00	0.00
9,500.00	90.00	0.05	5,749.91	3,380.93	-74.55	3,381.50	0.00	0.00	0.00
9,600.00	90.00	0.05	5,749.92	3,480.93	-74.45	3,481.50	0.00	0.00	0.00
9,700.00	90.00	0.05	5,749.92	3,580.93	-74.36	3,581.49	0.00	0.00	0.00
9,800.00	90.00	0.05	5,749.92	3,680.93	-74.27	3,681.48	0.00	0.00	0.00
9,900.00	90.00	0.05	5,749.92	3,780.93	-74.18	3,781.48	0.00	0.00	0.00
10,000.00	90.00	0.05	5,749.93	3,880.93	-74.08	3,881.47	0.00	0.00	0.00
10,100.00	90.00	0.05	5,749.93	3,980.93	-73.99	3,981.47	0.00	0.00	0.00
10,200.00	90.00	0.05	5,749.93	4,080.93	-73.90	4,081.46	0.00	0.00	0.00
10,300.00	90.00	0.05	5,749.93	4,180.93	-73.81	4,181.46	0.00	0.00	0.00
10,400.00	90.00	0.05	5,749.93	4,280.93	-73.71	4,281.45	0.00	0.00	0.00
10,500.00	90.00	0.05	5,749.94	4,380.93	-73.62	4,381.44	0.00	0.00	0.00
10,600.00	90.00	0.05	5,749.94	4,480.93	-73.53	4,481.44	0.00	0.00	0.00
10,700.00	90.00	0.05	5,749.94	4,580.93	-73.44	4,581.43	0.00	0.00	0.00
10,800.00	90.00	0.05	5,749.94	4,680.93	-73.35	4,681.43	0.00	0.00	0.00
10,900.00	90.00	0.05	5,749.95	4,780.93	-73.25	4,781.42	0.00	0.00	0.00
11,000.00	90.00	0.05	5,749.95	4,880.93	-73.16	4,881.42	0.00	0.00	0.00
11,100.00	90.00	0.05	5,749.95	4,980.93	-73.07	4,981.41	0.00	0.00	0.00
11,200.00	90.00	0.05	5,749.95	5,080.93	-72.98	5,081.40	0.00	0.00	0.00
11,300.00	90.00	0.05	5,749.95	5,180.93	-72.88	5,181.40	0.00	0.00	0.00
11,400.00	90.00	0.05	5,749.96	5,280.93	-72.79	5,281.39	0.00	0.00	0.00
11,500.00	90.00	0.05	5,749.96	5,380.93	-72.70	5,381.39	0.00	0.00	0.00
11,600.00	90.00	0.05	5,749.96	5,480.93	-72.61	5,481.38	0.00	0.00	0.00
11,700.00	90.00	0.05	5,749.96	5,580.93	-72.52	5,581.37	0.00	0.00	0.00
11,800.00	90.00	0.05	5,749.97	5,680.93	-72.42	5,681.37	0.00	0.00	0.00
11,900.00	90.00	0.05	5,749.97	5,780.93	-72.33	5,781.36	0.00	0.00	0.00
12,000.00	90.00	0.05	5,749.97	5,880.93	-72.24	5,881.36	0.00	0.00	0.00



Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07E-0603A
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4942.70usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	KBE @ 4942.70usft (Original Well Elev)
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-0603A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
12,100.00	90.00	0.05	5,749.97	5,980.93	-72.15	5,981.35	0.00	0.00	0.00	
12,200.00	90.00	0.05	5,749.97	6,080.93	-72.05	6,081.35	0.00	0.00	0.00	
12,300.00	90.00	0.05	5,749.98	6,180.93	-71.96	6,181.34	0.00	0.00	0.00	
12,400.00	90.00	0.05	5,749.98	6,280.93	-71.87	6,281.33	0.00	0.00	0.00	
12,500.00	90.00	0.05	5,749.98	6,380.93	-71.78	6,381.33	0.00	0.00	0.00	
12,600.00	90.00	0.05	5,749.98	6,480.93	-71.68	6,481.32	0.00	0.00	0.00	
12,700.00	90.00	0.05	5,749.99	6,580.93	-71.59	6,581.32	0.00	0.00	0.00	
12,800.00	90.00	0.05	5,749.99	6,680.93	-71.50	6,681.31	0.00	0.00	0.00	
12,900.00	90.00	0.05	5,749.99	6,780.93	-71.41	6,781.31	0.00	0.00	0.00	
13,000.00	90.00	0.05	5,749.99	6,880.93	-71.32	6,881.30	0.00	0.00	0.00	
13,100.00	90.00	0.05	5,749.99	6,980.93	-71.22	6,981.29	0.00	0.00	0.00	
13,200.00	90.00	0.05	5,750.00	7,080.93	-71.13	7,081.29	0.00	0.00	0.00	
13,300.00	90.00	0.05	5,750.00	7,180.93	-71.04	7,181.28	0.00	0.00	0.00	
13,342.25	90.00	0.05	5,750.00	7,223.18	-71.00	7,223.53	0.00	0.00	0.00	
PBHL 0603A										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
- hit/miss target										
- Shape										
PBHL 0603A	0.00	0.00	5,750.00	7,223.18	-71.00	1,565,619.24	3,469,770.14	40° 52' 25.130 N		103° 48' 4.693 W
- plan hits target center										
- Point										
Beffie #1	0.00	0.00	6,735.70	3,155.89	-234.56	1,561,549.56	3,469,684.53	40° 51' 44.942 N		103° 48' 6.822 W
- plan misses target center by 998.66usft at 9274.83usft MD (5749.91 TVD, 3155.76 N, -74.75 E)										
- Circle (radius 1,550.00)										

Casing Points							Casing Diameter (in)	Hole Diameter (in)
Measured Depth (usft)	Vertical Depth (usft)	Name						
6,089.08	5,749.85	7"					7.000	7.500

Formations							Dip (°)	Dip Direction (°)
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology					
1,560.60	1,550.00	Upper Pierre						
3,534.90	3,500.00	Hygiene						
3,686.77	3,650.00	Lower Pierre						
5,573.69	5,515.00	P200 Marker						
5,591.85	5,530.00	P300 Marker						
5,616.79	5,550.00	P350 Marker						
5,864.08	5,702.00	Sharon Springs						
5,876.34	5,707.00	Niobrara						
5,934.24	5,727.00	Top A Chalk						



Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07E-0603A
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4942.70usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	KBE @ 4942.70usft (Original Well Elev)
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-0603A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
400.00	400.00	0.00	0.00	Build 2°/100'
850.00	848.15	-34.93	-4.91	Hold 9° Inc
3,955.00	3,914.92	-515.93	-72.51	Drop 2°/100'
4,405.00	4,363.07	-550.86	-77.42	Hold Vertical
5,270.90	5,228.98	-550.86	-77.42	KOP, Build 11°/100'
6,089.08	5,749.85	-29.99	-77.42	LP @ 90° Inc, Hold
13,343.90				TD at 13343.90' MD